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SPECTRUM ANALYSIS.

BY CHARLES K. MILLS, M. D.

Read before the Northern Medical Association of Philadelphia, April 26, 1872.

The medical profession demands broad culture of its true apostles. Is not every contemplative physician at times forcibly struck with the thought of the wide scope naturally embraced by his studies? In order to take front rank in his calling, or even to keep level with his age, he must "know what's what" in almost a score of sciences which run parallel with or contribute to the practice of medicine. Spectral analysis is the last lode which he is asked to work, and it is one which promises a rich reward to the patient delver. The time is close at hand when a fair understanding of this subject will be deemed as essential to a complete medical education as a knowledge of microscopy and chemical analysis are now considered.

The light-sifting triangular prism of glass, with which Grimaldi first dissected a sunbeam, in the hands of modern science, such as Kirchoff, Bunsen, Huggins, Sorby, Stokes, and Hoppe-Seyler, is solving many of nature's most doubtful and difficult problems. To the spectroscope, the ores of earth and the stars of heaven have revealed their best defended secrets. Through it have originated new branches of physical and chemical science. To astronomy it has given the strongest impetus received since the discovery of the telescope. It is making solar, stellar and planetary chemistry, almost as

familiar as the strictly terrestrial sciences. Even into the realms of biology the light from this instrument has pierced, and is now diffusing, a fact which renders spectrum analysis of deep interest to physicians and surgeons—students of the processes of life—and those who, according to Byron, secundum artem, mend or end mankind.

In the present essay, my main purpose is to afford a comprehensive idea of the scope and bearing of spectroscopy in medicine, in physiology, pathology, and toxicology. As, however, I am well aware that this whole topic is, to many medical men—although they may be highly cultured in other respects—as yet an untrodden path, I will prelude my subject proper with a brief glance at the general progress of this new and important light-born science.

To Newton, the world is indebted for its first accurate information in regard to the analysis of sunlight. When an isolated pencil of light is allowed to fall on a transparent triangular prism arranged horizontally on its path, the light is bent from its course, both on entering and leaving the prism, and in addition, at the latter instant, it is broken up into the tints of the rainbow, which can be received on a screen as a vertical band of colors, called the solar spectrum.

It is customary, following the original investigator, to distinguish seven colors in this spectrum, these being from above downward, violet, indigo, blue, green, yellow, orange, and red. Philosophers, however, have differed in regard to the number of primary colors; some, as Brewster and Young, contending that there are but three;

others, as Mellorn, Bernard and Helmholtz, holding to Newton's doctrine of seven; while Sir John Herschel has added two to the original seven, making nine. Beyond the red Herschel found a crimson tint, which can only be seen by looking through cobalt-blue glass; and beyond the violet a lavender-grey, which becomes visible when the spectrum is received on paper turned yellow by tumeric. I have not the time to dwell upon many interesting points in regard to this brilliant rainbow streak, to speak of its magical calorific and actinic, as well as luminous powers, and of the almost incredibly rapid ethereal vibrations of which it is simply the visible expression.

The "waste of color" with which our earth is drenched is all owing to this spectral band. To this lovely sun-painted image every line in nature is due. Beautiful, however, as are the hues of the spectrum, and those to which it gives birth, we, as students of the new method of analysis, are more interested in the defects of color than in the colors themselves. Let us see. The colors of the spectrum seemed without breach, until Wollaston, in 1802, admitting the light through a fine vertical slit, discovered that there were gaps in the apparently uniform band; he made out two dark lines crossing its length. He did not, however, follow up his discovery, which might have led to grand results in his potential hands. The investigation was taken up by a patient and persevering German named Fraunhofer. Wollaston examined the spectrum by simply placing his eye in the path of the decomposed light; Fraunhofer used a telescope, and by 1814 had made out 376 lines crossing the spectrum. These dark lines, bands, or spaces, after the investigator, have been called, *Fraunhofer's Lines*. The most distinct sets of lines are especially known by this name. Some of the dark spaces, once thought to be single bands, are now known to consist of a multitude of fine lines. Anstrom enumerates more than ten thousand.

So much for the prismatic refraction and dispersion of a pencil of solar light, and the solutions of continuity thereby brought to view; but direct sunlight is not the only source of spectra. Artificial sources of light, such as incandescent solids and liquids, glowing vapors, and the electric spark, also produce spectra. The spectrum derived from sunlight directly, from reflected solar

light, and from star light, is called an interrupted spectrum, because of the dark transverse gaps which it exhibits. An incandescent solid or liquid gives a continuous spectrum, that is, a colored band, unbroken by dark or by brilliant lines. A glowing vapor produces a spectrum of bright lines, separated by wide dark intervals. Each vapor has its own set of bright lines. The most marked color in the artificial light is the best defined in its spectrum. The salts of sodium, for instance, it is well known, cause a yellow flame, hence a yellow tint will predominate in the spectrum of sodium. The electric spark affords a bright line spectrum, compounded of the spectra belonging to those vapors between which and of those through which the discharge takes place.

The extraordinary delicacy of the spectrum analytic method is truly astonishing, in illustration of which fact I will condense some statements from Roscoe. The $\frac{1}{150,000,000}$ part of a grain of sodium can easily be detected. This substance is always present in the air, and all bodies exposed to the air, when heated, show its line. The $\frac{1}{5,000,000}$ part of a grain of lithium, and the $\frac{1}{1,000,000}$ of strontium and calcium, can also be readily discovered. These, too, are widely distributed elements. Lithium was formerly only known to exist in four minerals; it has now been determined to exist in rocks, in sea and river water, in the ashes of most plants, in milk, human blood, and muscular tissue. Cæsium and rubidium are new alkaline metals discovered by Bunsen in the mineral waters of Baden and Dückheim. Thallium is a metal discovered by Crookes in 1881, and distinguished by the splendid green line which its spectrum exhibits. Iridium was discovered by Professors Reich and Richter in zinc blende, and is distinguished by the two indigo bands in its spectrum.

My limited time will not permit me to discuss, as I would desire, the grand achievements of the spectroscope in astronomy and cosmical physics. I will allude to but one of these; the researches with this instrument have entirely exploded the doctrine of Wilson, Bede, and Sir William Herschel, that the sun is a dark nucleus, surrounded by three atmospheric strata or envelopes. It has rendered the theory that the sun is inhabited by beings like ourselves altogether untenable. This orb is now believed to consist of an incandescent liquid or solid

nucleus, enveloped in an atmosphere of flame. Note here the rationale of the causation of *Frauenhofer's* lines. An incandescent liquid or solid gives a continuous spectrum; a glowing vapor affords a spectrum of bright lines, each vapor having its own set of bright lines. A gas or vapor, according to a grand law established by *Kirchoff*, absorbs those bright rays which it can itself emit. The vaporous envelope of the sun cuts off those rays from the central orb to which this envelope can itself give rise, and *Frauenhofer's* lines mark the position of these halted rays.

For the benefit of those who have no knowledge of the construction of the instrument I will here describe a common form of the spectroscope. In a box or chamber, supported on a pedestal or stand, a prism or prisms are mounted, with their refracting edges horizontal. To the front of this chamber is secured a tube, called the collimating tube, which has a convex lens or lenses at the end nearest the chamber, and a slit at the other extremity, in the principal focus of the lens or lenses. This slit can be adjusted in width by means of a fine screw. The back of the box or chamber has attached to it a telescope, with an adjustable eye-piece. The collimating tube and the telescope generally have object glasses of from ten to twenty inches focus. Sometimes there is a third tube connected with the apartment containing the prism, which can be moved by a screw, and which holds at the end nearest the prism a lens, and at the other a scale divided into millimetres. The tube is so placed that when a light passes through the scale the image of the scale is reflected from the prism into the telescope.

The method of observing spectra, of making an analysis by means of the spectroscope, in other words, is not difficult to understand. Solids and liquids must be brought to a state of incandescence; their spectra are continuous, and so much alike that they cannot often be distinguished. Spectrum analysis is more particularly concerned with the investigation of gases, which give discontinuous or interrupted spectra perfectly characteristic. Substances should, therefore, whenever practicable, be reduced to the vaporous or gaseous condition; and whatever they may be, they are so placed that the light from them will pass through the slide of the collimating tube.

The Bunsen burner is sufficient to volatilize many of the metals, such, for instance, as potassium, sodium, lithium, stradium, calcium, barium, caesium, rubidium, copper, manganese, thallium, and indium. The electric induction coil is often used to volatilize more refractory substances. Gases can be well investigated by passing an electric induction spark through their extremely attenuated atmosphere, as found in the case of Geissler's tubes, or much better in Plücke's capillary tubes. By Plücke's method, capillary tubes, with a ball at each extremity, are filled with the gas to be examined, and then exhausted to an extreme degree of attenuation. Electrodes of platinum or aluminum are inserted into the bulbs, and these are connected with an induction coil. The gases or vapors can be rendered intensely luminous in this way, and emit a brilliant line of light, whose spectra can be determined, even without a complete spectroscope, by simply viewing the light through a prism held before the eye. Liquids in glass tubes, or in glass vessels with plane-parallel sides, are placed before the slit, and the light passed through them. They give what are known as absorption bands in various parts of the spectra.

These absorption spectra should be understood. Certain substances have the property of absorbing light; that is, they can weaken or destroy some of the ethereal vibrations which constitute light. The phenomena of absorption are strikingly seen when light is sent through colored bodies. Looking through red glass, every object appears red, because the glass absorbs every other color but the red. Most kinds of glass absorb rays of certain colors, and allow others to pass through in very different proportions. Colored liquids have a more decided and marked absorption power than colored glass. The colors of liquids, as seen by white light, are mixed. Their absorption varies exceedingly, according to the refrangibility of the light which falls upon them, and the degree of concentration possessed by the solution. When a colored liquid, as blood, is placed in front of the slit, and a bright light passed through it, a brilliant spectrum appears, crossed by dark bands produced by the absorbing power of the liquid.

As I advance in the consideration of my topic, it will be seen that the spectroscope is one of the most powerful auxiliaries to a

scientific understanding of our grand medical art that modern science has produced. In physiology and pathology, and even in toxicology and medical jurisprudence, much has already been done with it, but much remains to be accomplished. In botany and zoology there are many opportunities for spectroscopic investigations; and so I might go on at some length, were it profitable, enumerating sciences collateral to medicine, in which spectral analysis is destined eventually to become a prominent feature. In passing, I might here remark that the spectroscope has even been introduced into the affairs of every-day commerce; Sorby, for example, having used this instrument to examine dyes, wine, beer, mustard, cheese, butter, and similar articles.

In physiological, toxicological, and similar researches, an instrument, known as the *Spectrum-Microscope* or *Microspectroscope*, is generally employed. As its name implies, it consists of a combination of a microscope with a spectroscope. The two are so united as to enable the observer to examine the spectrum of the light passing through any object in the field of vision. Sorby illuminated the object to be examined by placing it in the spectrum formed on the stage of the instrument by a prism and lens placed beneath; but Huggins, in May, 1865, first pointed out the method of observing the spectra of the light from microscopic objects by means of a slit and a prism placed *above* the object-glass of the microscope. In the *direct vision* instrument, now most commonly used, the spectroscopic arrangement takes the place of the ordinary eye-piece of the microscope. * * In the best instruments there is an apparatus by which the substance under inspection can be compared with the spectra of known substances.

Crookes has devised a form of the spectrum-microscope, in which, beneath the principal stage of the microscope is a sub-stage carrying a half-inch object-glass, which throws an image of a slit into the field of view. The slit is carried on a brass slide, by pushing which, it can be replaced by a circular aperture admitting a wide beam of light; or a square aperture, to be used when searching for *dichroism*—a property which some crystals possess of appearing of two different colors when light passes through them in different directions. Immediately above the object-glass is a slide carrying the direct vision prisms, which, by a move-

ment of the finger, can be thrown in or out of the field. All these parts may be permanently attached to the microscope. When, however, it is desirous to examine the spectrum of any object which is in the field, the image of the slit is brought in with one touch of the finger, and the prisms are pushed in with another, when the spectrum appears and may be brought to a caule focus by the ordinary rack-work adjustment.

It will be necessary to speak in some detail of spectroscopic investigations of the blood, these lying at the root of the use of spectrum analysis in physiology and pathology.

Sorby, Stokes, Hoppe-Seyler, Valenten, Gladstone and a few others have been prominent in the study of blood by this mode of analysis. Stokes, in 1864, in the *Proceedings of the Royal Society*, published the first paper on the relations of light to the coloring matter of the blood. In an article in Volume II of the *Quarterly Journal of Science* (British), for 1865, *On the Application of Spectrum Analysis to Microscopic Investigations, and Especially to the Detection of Blood-stains*, Sorby claims to be the first to apply spectrum analysis to microscopic investigations, and describes a form of spectrum-microscope in which the object to be examined was examined by placing it in a spectrum formed on the stage of the instrument by a prism and lens placed beneath. This, as I have already stated, has been supplanted by an arrangement in which the prism is placed *above* the object-glass. Among other investigations, Sorby examined the spectra of crystalline salts and their solutions by means of the spectrum-microscope.

(To be Continued.)

REPORT OF THREE HUNDRED AND THIRTY-SIX OBSTETRIC CASES OCCURRING IN PRIVATE PRACTICE.

BY FRANCIS H. MILLIGAN, M. D.,

Of Wabasha, Minnesota.

The above cases are those attended by me since I began the practice of medicine, twenty-one years ago last March. In point of number I am aware that they are equalled by many. When, however, it is remembered that with the exception of the first two years of my professional career I have been located in a new country, with a small population, extending over a circle of coun-

try for miles around my place of residence, you can readily see that the notes of the above cases will be of interest to the profession at large.

The great number and variety of difficult labors, above the same amount occurring in a more densely populated district, in my opinion can be accounted for by the great distance which a number of these cases were from the medical attendant at the commencement of the labor.

The following table will show the presentation, sex of child, and other data which will be of interest:—

	No. Total.
Male Children.....	175
Female Children.....	161=336
Presentation of Head.....	300
Presentation of Breech.....	20
Presentation of Shoulder.....	10
Presentation of Face.....	6=336
Prolapsed Cord—	
In Breech Presentation.....	16
In Vertex Presentation.....	3
In Shoulder Presentation.....	3= 22
Miscarried—	
From Accident.....	8
From unknown causes.....	12= 20
Abortions caused—	
By Drugs.....	8
By Accident.....	6
By Instruments.....	6= 20
Puerperal Convulsions—	
Before and during Labor.....	8
After Labor.....	6= 14
Puerperal Fever.....	12 12
Placenta Prævia.....	4 4
Craniotomy.....	6 6
Application of Forceps.....	25 25
Post Partum Hemorrhage.....	6 6
Retained Placenta—	
In Abortions.....	6
In Miscarriage.....	5
In Full Term Labors.....	4= 15
Multiple Births—	
Dead Born.....	4
Living.....	4= 8
Double Placenta in.....	4
Single Placenta in.....	4= 8
Spina Bifida occurred in—	
Complicated with Intra Uterine Hydrocephalus.....	1
With Club Feet.....	5
No Complication.....	1= 7
Version by the Feet—	
For Placenta Prævia.....	3
For Arm Presentation.....	7
For Exhaustion of the mother, head of the child retarded in superior strait.....	3
From other causes.....	5= 18
Natural Labors.....	272
Application of Forceps.....	25
Version by the Feet.....	18
Manual Extraction for Adherent Placenta.....	19
Craniotomy.....	6
Evisceration.....	3=336

	No. Total.
Number of Deaths of Mothers—	
From Puerperal Fever.....	4
From Puerperal Convulsions.....	4
From Uterine Hemorrhage.....	3
From Placenta Prævia.....	1
From Debility and Septicæmia.....	1
From Abortions.....	4
From Rupture of the Womb.....	1= 17
Number of Deaths of Children—	
Still-born from Abortion.....	20
Miscarriages.....	20
Other Causes.....	19= 59
Number of Cases in which Mother and Child died—	
Puerperal Convulsions.....	2
Placenta Prævia.....	1
Debility and Prostration.....	1= 4
Number of Mothers died from all causes.....	— 21
Number of Children died from all causes.....	— 63

Most all of the above cases were women of good general health, pioneers from the older States, who had come to the West for their new homes; all young and active, inured to the hardships of a life in a new country; women of nerve and determination. As they pass away to give place to their daughters, they cannot but be admired for their moral and social worth. And yet you will see that the great amount of difficult and instrumental cases is apparent. In a great majority of the breech presentations, also of the shoulder, the want of knowledge of the attending midwife did much to complicate the case. For example, when the shoulder presented, the midwife or neighboring granny, wishing to deliver before the arrival of the medical attendant, often pulls down the shoulder and arm, sometimes using so much force as to pull off the arm.

Again, in breech presentations, I have known the midwife to try to keep back the descent of the breech, frightened to death, thinking it was the bladder. Numerous examples could I relate of cases where the midwife or the attendant did everything that could be done, under any circumstance, to retard and complicate the labor. A case in point. After a miscarriage, a retained placenta, lying in the vagina, was, by a German male pretender to the obstetric science, taken for a retroverted uterus.

Prolapsed cord, as the table shows, occurred sixteen times. Those which occurred in breech presentation, the feet were brought down, and delivery effected. In the head presentations, I lost two of the children; I turned and delivered in one case, and saved

the child. All the shoulder presentations were fatal to the child, with this complication. In one instance in a shoulder presentation, the cord was brought down by the meddling of the midwife. Miscarriages from accident were always preceded by alarming hemorrhages and prostration. One case died of hemorrhage, and another of puerperal fever.

Abortions, as the table shows, are not as numerous as they are in more densely populated districts. Four deaths have been reported, three in married, and one in single women. Eight were caused by the administration of drugs with a criminal intent, in which the wife, husband, and others, were equally to blame. Of the accidental cases, so reported, one was not altogether the result of an accident, and came near costing the woman her life. The instrumental cases occurred generally in married females, one of which proved fatal.

To proceed. The alarming increase of abortions will not be denied. All over the land, husbands and wives will openly apply to physicians for relief, and not a blush of shame is shown on their faces. This child murder is a growing evil: a disgrace to our land, and a dishonor to all concerned. I warn our younger members of the profession to beware, for to them will applications be the most frequent. I am not much of a moralist, but in all these cases where the husband and wife have been party to the murder of their own offspring, ill luck and bad feeling has been their lot in life, and in no single instance I can now call to mind have the parties to these child murders been bettered by their criminal act.

Puerperal convulsions before labor have occurred in eight cases. In all of these but two, instrumental delivery was effected, but the child died with the mother. In four of the eight cases above stated, the children were born alive, and are now, so far as I know, yet living. One of the above cases occurred at the sixth month; the mother taken in a convulsion soon after returning from church, the convulsions returning every fifteen minutes for four hours, when they occurred every hour and a half for forty-eight hours. The child was then born putrid, and showed indications of having been dead for some time. General bleeding and chloroform was the treatment in this as in other cases of puerperal convulsions. On the slightest motion the chloroform was

applied or administered with the best effect. After delivery, all the children lived, and also all the mothers but one, and another which died of puerperal fever. My habit in puerperal convulsions has been to deliver as quick as possible, to bleed until the effect is produced on the pulse, to administer chloroform when the patient manifested the slightest spasm. In one of the above cases, twins were delivered, the first by forceps, the second by eversion by the feet. Both children lived, but the mother died twelve hours after delivery in a convulsion. The great trouble in this case was undoubtedly uræmic poison. No urine was voided, in fact there was none secreted. The first pain was accompanied with a convulsion, and they occurred at intervals of from five to ten minutes until the woman died.

I have seen no epidemic of puerperal fever; all my cases have been sporadic. One of the cases of puerperal fever resulted in mania, and died on the fourteenth day.

In *placenta prævia*, which has occurred in four cases, in three of which the mother and children lived, forced delivery was effected by version of the feet as soon as the os was sufficiently dilated to admit of the operation. In one case I lost both mother and child.

Craniotomy was performed in six cases, all for impacted head in the superior strait of the pelvis. Sufficient time was allowed and efforts made to turn before the operation was resorted to. In every instance the mother recovered.

Application of the forceps, as the table shows, has been resorted to quite frequently in a number of cases. Still, in no single instance, can I honestly ascribe any bad results to mother or child by the operation. It is true I have extracted dead children, but the application of the forceps could not have been the cause of the death of the child, for the head had been in the cavity for hours, and all natural efforts had failed when the instruments were applied.

I delivered one woman with forceps, when the head of the child was retained in the pelvic cavity for twenty-six hours, face presentation. The woman had vesico-vaginal fistula. I do not think that the forceps had anything to do with producing the injury. I have used the long forceps for the reason that they could be adjusted, when the short forceps could not be used.

Multiple births, as shown by the table, were eight. Dead born four. The head pre-

sented in all the first children born, the breech in the second.

In uterine hemorrhage after labor, the indication of treatment has been with me to create uterine contraction externally by cold and manipulation, internally by removing all clots from the cavity of the womb. I have placed very little faith in ergot, and have never had a case where I have seen it do any good. Immediate measures are those which we should rely on; the great prostration of the mother, with the irritability of the stomach, prevents the action of the ergot. Dr. Lincoln, of this city, resorted to intra-uterine injections of persulphate of iron in a very severe case of uterine hemorrhage, in 1861. The case was one which I had attended. Being appointed Medical Officer in the army, the Doctor took charge of the case, and used the form of treatment above mentioned, the woman making a rapid recovery. This, as far as I know, was the first application of the kind made in the State, but now has grown into general use.

The operation of evisceration for transverse presentations, where the shoulder has descended, the arm protruded, and in one instance actually torn from the body, is one of the most difficult that I have performed in obstetric practice. I have been compelled to operate alone, miles from medical assistance, and with no one to render me aid but the neighboring women. All the women upon whom I operated were worn out by nervous prostration and fear; immediate action to save life was necessary. At best, it is not an enviable position to be placed in, but when you are alone, far from the assistance of a medical friend, you will find that the operation is one of the greatest moment. Professor Paget* has devised an instrument to decapitate the head of the child in these cross positions, of which Dr. Kidd, in his Address to the Obstetrical Society of Dublin, on Modern Improvements in the conduct of Labor, speaks very highly.

The case of rupture of the womb was produced by the administration of ergot.†

Spina bifida occurred in seven children, one complicated with intra-uterine hydrocephalus.

Club feet was also a complication in all but one of the remaining children which were afflicted with this deformity.

*Medical and Surgical Reporter, page 392, May 4th, 1872.

† Richmond Medical Journal, Vol. 1, page 199.

I had one case of imperforate anus, the anus opening into the vagina, child otherwise healthy.*

ANÆSTHETICS.

In all of my operations I have used either ether or chloroform. My preference is in favor of the latter article, for the reason that it produces less nausea and vomiting. The excited state which ether often produces on the patient creates too much excitement, which the bystanders too often attribute to the operation which the physician is performing. However much chloroform may be condemned in general surgery, in my opinion, in the operations peculiar to the lying-in room it has no superior as an anæsthetic. Few physicians would at the present day attempt to perform any operation of importance without its use. I would as soon think of leaving my instruments as I would my chloroform, when called to a distance in a labor case. I do not know that I can now call to remembrance a single case in which I have done wrong by having instruments and chloroform. On the contrary, I could state when the absence of instruments and chloroform resulted in the death of the mother and child.

Version by the feet has been performed by me eighteen times, and I must say it has not resulted in any bad effects to the mother or child. In two cases I failed to deliver the head. One of the children was alive, and probably died from my imprudence in resorting to the operation before I could get my instruments. The instruments were sent for only a distance of three squares, but the child was delivered dead before their arrival.

Twice in my experience, I have failed to deliver the head after the body was born. My usual habit is not to resort to turning, unless I have my instruments, so as to guard against the detention of the head at the inferior strait.

Version by the head, so often spoken of and performed by Doctor Wright, of Cincinnati, has not been very successful in my hands, especially when the water has drained off. When version is necessary, the feet of the child give us the best hope of success, particularly if we wish to deliver quickly. Cephalic version will, I apprehend, scarcely come into general use. Nevertheless, to Dr.

*Northwestern Medical and Surgical Journal, Vol. 1, No. 2, page 49.

Wright the profession are greatly indebted for this operation in obstetric practice.

REFLECTIONS.

When I started out in life as a practitioner of medicine, I formed a plan to register the exact position of the child's head, the duration of the labor and other data in all my obstetrical cases. In the hurry of a large and extensive country practice, which in any country is laborious, more particularly so in a new country, I have found that it would be impossible to be as minute as I should have wished.

In twenty-one years, a long time, many improvements in our profession have taken place; the labors in the East, of Sims and Emmett, have been crowned with success. Pope and Brainerd, of the West, have passed away, to leave names behind them which few in our day will equal. Dunglison, Jackson, Dickson and Gerhard, household names in our profession, are gone. Gurney Smith, Aitken Meigs, Da Costa, and Tyson are their worthy successors. Our late war brought out the merits of a great deal of our American talent, North and South, and if no other good resulted from the loss of human life, American surgery stands to-day unequalled in all its branches by any nation on the face of the globe. Our sons need no longer seek foreign countries to perfect their medical studies, for they would leave behind them in their own native land better medical schools than they could find in any other country under the sun. Our hospitals are as extensive as any in Europe, and our clinical teachers will compare favorably, in all the branches of medicine, with any in Europe.

HOSPITAL REPORTS.

PHILADELPHIA ORTHOPÆDIC HOSPITAL, AND INFIRMARY FOR NERVOUS DISEASES.

Service of Drs. MORTON and GOODMAN.

[REPORTED BY DAVID DAVIDSON, M. D.,
RESIDENT SURGEON.]

Case I.—Long Standing Strumous Disease of the Knee.

Robert E. P., aged six years, was brought to Dr. Morton's clinics during the months of March and April; the mother died of phthisis; father healthy; when six months old the child had strumous ophthalmia, and when a year old he suffered from suppurative synovitis in the right knee-joint; abscesses opened spontaneously, discharging

osseous fragments. After a long and painful confinement, the leg gradually became contracted, and distorted, and atrophied, fistula remaining unhealed. April 22 the little patient was admitted into the hospital with a view to straighten the limb after resection. On examination the joint was only partially ankylosed; in the popliteal space most of the integument was lost through ulcerative action, and dense cicatricial tissue was found pierced by numerous fistulous tracts through each; a probe readily detected necrotised bone.

Lacto-phosphate of lime, and cod-liver oil, with brandy punch and beef tea were prescribed.

April 27.—Resection was attempted after etherization, but the parts were found so disorganized, the necrotised condition involving the tibia and femur so extensively, and the loss of integument in the popliteal space so great, that amputation was performed; a long anterior skin flap was dissected up, the muscles cut circularly, and no posterior flap was required; three vessels only required ligature, and silver sutures brought the wound together; charpie and a bandage completed the dressing, which was not removed for four days, there being little or no discharge, the parts uniting almost entirely by first intention; ligatures came away on the eighth day.

May 31.—Child up and dressed; rapidly improving in health and strength.

June 12.—Discharged; the child was detained long after complete union in the stump.

Case II.—Slight Varus, Division of Tendo-Achillis and Plantar Fascia.—Cure.

Susan C. M., age 18; parents healthy; no deformities of any kind ever existed in the

No. 1.



family; the child's mother being seriously affected prior to her confinement, a child having died suddenly in her arms; from

this she did not fully recover until after her confinement. Talipe Varus was noticed in the child at birth. At the age of six months the Tendo-Achillis was divided, and an apparatus worn for six years; the same tendon was again divided on account of recurring inversion, after an interval of several years, by Dr. Morton, October 18th, 1870.

May 27th, 1872.—Patient was brought to Dr. Morton's clinic, when the plantar fascia was found exceedingly tense, and slight disposition to varus. The foot otherwise was quite well and strong, with good flexion and extension, and prelateral motion. Free division of the contracted fascia was performed, without any anæsthetic; no blood followed the section; adhesive plaster applied and foot and leg bandaged as high as the knee; ordinary night shoe (see Fig. 1) was applied, and worn for three days, when the patient was allowed to walk about with the ordinary braces adapted for weak ankles, the usual club foot apparatus being long since dispensed with.

June 1st.—Patient discharged, perfectly cured.

Case III.—Double Equino-Varus.

Louis Miller, set. 6; no hereditary deformity of any kind in his family. The mother noticed, sometime prior to her confinement, a peddler whose feet were very much deformed pass her window daily. The man's feet made a great impression upon the mother; her only thought, at the time, was that she would have a child deformed in a similar manner. The child was born with double club-foot of the Equino-Varus variety.

When three months old, Dr. Gross, of Jefferson College, divided the Tendo-Achillis and plantar fascia. Braces were then applied, and worn for six months; parents not noticing any improvement, laid aside the braces.

May 4th, 1872.—Admitted to Hospital. Patient walked on the dorsum of the foot; feet were very much disfigured. Under the influence of ether, as an anæsthetic, Dr. Goodman divided freely the Tendo-Achillis in two places, and also the plantar fascia of the right foot, the tendons of the tibialis anticus and Achillis of the left. The feet were well stretched, and the tarsus brought into their normal position. Kolbe's night-shoe for club-feet (see Fig.

1) was then adjusted; patient put to bed. On third day the shoes were removed, and feet were well stretched. Kolbe's walking-shoes (see Fig. 2) were then put on. The feet were stretched daily.

June 7th.—Patient discharged, perfectly cured.



MEDICAL SOCIETIES.

Minutes of the Rock River (Wisconsin) Medical Society.

According to resolution, the Society held its third meeting at Theresa, May 8th, 1872. The following members were present: Drs. Marston, Loehr, Lueck, Rodgers and Senn. The secretary being absent, the president appointed D. N. Senn as secretary pro tem.

Dr. Charles Hævernick, of Iron Ridge Station, member of the Fond du Lac County Medical Society, applied for admission, and after a favorable report of the Censors, he was unanimously admitted.

After the appointment of the usual committees, Dr. N. SENN read an essay on

THE PATHOLOGY AND TREATMENT OF HYDROCELE.

The causes, symptoms and diagnosis of hydrocele were fully described. In treatment the author would rely entirely on the seton. He applies the seton in the following manner: A trocar is introduced at the usual point of tapping: after the contents of the hydrocele have escaped, the stilette is again introduced in the canula, and both are pushed through the anterior wall of the tumor from within outward, so that the instrument emerges $1\frac{1}{2}$ to $2\frac{1}{2}$ inches from the point of entrance. The stilette is now withdrawn from the canula, and an eyed probe drawn through it, armed with a few strands of silk. The canula is now withdrawn, the silk threads are loosely tied, and the resulting inflammation carefully watched.

He prefers the seton for the following reasons: First, It never fails in curing the disease; second, it is easily applied; and third, it is safe if care is taken to remove it as soon as irritation enough is set up.

In discussing this subject Dr. Rodgers stated that he had seen about a dozen cases of hydrocele; all of them were cured by injecting tinct. iodini. He, therefore, would first try injections, and after he failed with them would resort to the seton.

Dr. Lueck said that in one case, treated by the seton, he had seen severe symptoms, and afterwards a tedious recovery. And hence he would first use injections, and next the seton, if necessary.

Dr. Loehr reported two cases of hydrocele cured by the application of the tincture of iodine externally, and strapping. Other

cases he saw recover after injections of the same substance.

Dr. Marston had seen a dozen cases; all of them were treated and cured by a diluted injection of tinct. Iodini. He would not interfere with the hydrocele of young children, as that generally gets well by itself.

PROGRESSIVE MUSCULAR ATROPHY.

Dr. Lueck presented a very interesting and rare case of disease to the Society. A young man, aged 22 years, affected with wasting of all the muscles of the body. The occupation of the young gentleman is teaching. About six months ago he first noticed that his hand would get easily tired in writing; at the same time he perceived that the ball of the right thumb had nearly wasted away. Having a walk of two miles to his school, which used to be nothing to him before, it now made him quite weary, so he rode on horseback. However, gradually he felt his weakness increasing, so that after a little while it was impossible for him to manage his horse, and he had to abandon his occupation. This wasting progressed continually, so that now his muscles are reduced to less than half of their former volume. Respiration is labored and sometimes sighing only, from want of power in the respiratory muscles; for the lungs and heart are sound. The excretions are healthy. The urine has been tested for sugar by Moore's and Trommer's test, however, with negative results. And heat and nitric acid have shown that there is no albumen in it.

The diagnosis, according to Niemeyer,* is Progressive Muscular Atrophy.

The Doctor drew the special attention of the members to the difference between this disease and that known as *Progressive Loco motor Ataxia*. In locomotor ataxia, the power of co-ordinating the movements of the body to the will is lost; thus, for instance, the patient cannot walk with his eyes shut. Our patient walked several times across the floor without stumbling. In ataxia the nutrition is the last that is affected, generally only after the disease has lasted for years. Here the wasting came first, and from it resulted the lack of power. Again, the cause of ataxia is found in the nervous system; if the muscles are affected, they are only so secondarily, but in this case the muscles are primarily affected, and the nervous system not at all.

The treatment of the patient is of a tonic kind, viz.: Phosphorus in cod-liver oil and strychnia internally, and electricity with friction externally.

This being an annual meeting, the following officers were elected for the next year:—

President, Dr. E. M. Rodgers, of Hartford.
Vice President, Dr. L. Loehr, of Theresa.
Secretary and Treasurer, Dr. A. W. Lueck, of Mayville.

ADDRESS.

Dr. Marston, the retiring President, delivered a very able address, in which he gave a vivid sketch of the position of the physician in ancient and modern times. He especially contrasted the position of a regular educated physician with that of a pretender, and complained that we have no laws to stop the nefarious business of the quack. However, the Legislature has not proven to be the true remedy for this evil. It can only be vanquished, 1st, by a diffusion of medical knowledge among the people. Thus every nostrum should have the formula of its composition printed on the outside of every bottle, etc. And, 2d, the true physicians should not quarrel so much among themselves; especially the almighty dollar should not be the cause of difficulty. Promoting these points, we shall succeed in elevating the professional standing more and more.

CEREBRO-SPINAL MENINGITIS.

Dr. Senn was called upon to report cases of cerebro-spinal meningitis now under his treatment. He stated that the symptoms are those generally seen in this disease, viz., headache, vomiting, pulse from 70 to 140, always soft and compressible, followed, sooner or later, by the pathognomonic retraction of the head, and coma. He considers the disease to be caused by a peculiar poison introduced from without into the body and having a predilection for the spinal cord and its membranes.

He followed various plans of treatment, however, with no encouraging result; for more than one-half of his cases proved fatal. He has had the best success with a moderate antiphlogistic treatment in the beginning of the attack; then he used tr. cantharides and muriat. tr. of iron, and still later he relied on the bromide and iodide of potassium. During convulsions he employed the ext. of Calabar bean, in doses of 1-24 of a grain, every two hours, till perfect relaxation resulted, to the great relief of his patient.

The following resolution was introduced by Dr. Senn, and unanimously adopted:—

Resolved, That we tender our thanks to Dr. Marston for his able and eloquent address, and that he be requested to furnish a copy of the same for publication.

The President appointed the following censors:—

Drs. Senn, Loehr and Hunt.

The committee on time and place for next meeting reported in favor of meeting at Theresa on the second Wednesday of July. Adopted.

Cholera Infantum is the subject for discussion at the next meeting.

A. W. LUECK, Secretary.

* *Pathologie und Therapie*, Band II, Seite 574.

EDITORIAL DEPARTMENT.

PERISCOPE.

Impacted Rectum in a Child Six Years Old.

Dr. S. C. BUSEY reported the following case, in the *National Medical Journal* :—

On the 8th of October, 1870, two girls, aged respectively 11 and 6 years, ate plentifully of a small grape, known as the chicken grape. The next day both complained of pain at stool, and the mother administered to each a dose of castor oil. Upon the eldest it acted freely, and brought away a large quantity of the seeds and skins of the grapes. The younger continued to suffer severe pain at stool, and at every effort a few seeds and skins were discharged. On the morning of the 10th I was called to see her. Found her playing with other children, free from pain, except at stool; appetite as usual, tongue clean, no fever nor tenderness about the abdomen, no swelling, nor any hardness about the belly. Around the anus, especially about the coccyx, there was great tenderness. The mother said the child screamed with pain at stool. At every effort some fecal matter passed, and that during each effort a hard mass of grape seeds and skins came to the verge of the anus, and immediately receded upon the subsidence of the pain and straining effort. I could not induce the child to make an effort at stool, though they occurred involuntarily hourly. Ordered the oil to be repeated, injections of tepid water per anum, and directed the mother to watch for protruding mass, and to seize it while the child was at stool, and, if necessary, to employ the handle of a spoon to disengage the mass. In the afternoon she reported that she had succeeded in taking away about a tablespoonful of the mass, and that a small quantity of fecal matter had passed. The expectant plan of treatment was continued until the morning of the 12th without any abatement of the pain at stool, and without producing a free evacuation of the bowels. At my visit this morning the child had voluntarily returned to bed after a small breakfast, was slightly febrile, tongue slightly coated white, and somewhat reddened at the tip, slight tenderness along the course of the transverse colon was detected on pressure, and there were slight paroxysms of pain during the intervals of the effort at stool. Feeling that further delay was hazardous I introduced a bullet-pointed probe through the anus, and felt distinctly an inch and a half within, a hard, firm, unyielding mass. Passing my little finger I felt the same mass, measuring about an inch and a half in diameter, and proceeded immediately, the left little finger being in-

troduced into the rectum, with the aid of the spoon-pointed director (usually found in pocket cases), to extract the contents. During the succeeding half hour I drew out, in broken masses, a pint of grape seeds and skins, unmixed with fecal matter, and apparently unaffected by the digestive process. During the operation the sphincter relaxed completely, about a drachm of blood oozed away, and much pain was occasioned the child. She was put to bed, a small dose of oil administered, and with a view to wash away any remaining seeds and skins, to arrest any hemorrhage, and to abate any tendency to inflammation, occasional enemas of water, at ordinary temperature, were ordered. During the afternoon the child had a free evacuation, and arose from bed to play with other children. She has continued perfectly well since.

The points of interest presented by this brief report consist—

1. In showing the extent of impaction to which the rectum may be subjected without producing any alarming or severe symptoms, and the length of time it will tolerate such impaction without the supervention of inflammation.
2. The value of the voluntary effort at stool, which enabled the elder to disengage a mass equally firm, and perhaps larger, of the same materials.
3. The indigestible nature of the materials ingested, and, consequently, showing the extent of toleration, by the digestive tube, of a mass of indigestible material without discomfort.
4. The folly of tentative treatment when the condition is recognized, and the importance of rectal examination, especially in children, when constipation follows the ingestion of indigestible substances.

The fecal matter represented to have passed subsequent to the eating of the grapes, and after the administration of the oil, must have been below the grapes. The material must have been collected and become impacted below the sigmoid flexure, or else a tumor would have been discovered in the left iliac region; and, furthermore, it seems impossible that such a hard and unyielding mass could have passed through the flexure. This view seems confirmed by a consideration of the facility and rapidity with which the rectum absorbs the liquid portion of fecal matter. The frequent desire to go to stool seems only to have followed upon the descent of the materials into the rectum, and ceased before the dislodgment of the impacted mass. Defecation is a reflex movement, due, in a healthy condition of the intestinal tube, to the presence of fecal matter in the rectum. In this case there does not seem to have been any derangement of the

peristaltic actions of the bowels, or of the reflex movement of defecation, but that the latter was insufficient to expel the mass; consequently, it collected and became impacted in the rectum. The stool succeeding the removal of the mass contained no seeds or skins of the grapes.

Operation for Urethral Stricture.

The venerable Dr. J. P. METTAUER describes his operation for stricture as follows, in the Boston *Medical and Surgical Journal*:

For many years the writer has paid particular attention to the disease, during which time numerous cases were treated by him, all of which were carefully studied and subjected to the most rigid and careful scrutiny. In a very large majority of the cases treated the strictures were very close, and many of them penetrated with much difficulty, even with the instruments best adapted to such conditions; and out of more than two hundred examples he has met with only four which could not be penetrated; and as these cases required a peculiar mode of treatment, which he presumes to denominate the rapheo-perineo-urethral section, this paper is designed to report them to the profession.

CASE I.—M. Y., the subject of this case, was a farmer, *æt.* about 30, who had enjoyed excellent health down to the time he became strictured, when it seemed somewhat impaired, but not enough so to confine him to his room, or even to unfit him for his ordinary avocations. The stricture had existed upwards of two years before the writer was consulted, but only in a slight degree until three months before the writer treated the case, at which time it began to close the urethral passage with considerable rapidity, seeming to render micturition more and more difficult daily; and when the suffering man arrived in my neighborhood he could only urinate by drops. A critical examination of the urethral passage disclosed the existence of an exceedingly close stricture in near proximity with the membranous portion of the canal. Many and varied trials with bougies, catheters, and probes, failed to penetrate the stricture; and the difficulty in discharging the urine threatening retention, it was determined to cut down upon the stricture, through the perineum, along the rapheal line, which was done in the following manner on the 11th of August, 1886.

The patient was placed on his back, resting upon a common dining table covered with folded blankets, as in lithotomy. The feet and legs were held and supported by an assistant standing on each side. A female sound, well oiled, was first entered at the meatus and carefully passed down to the stricture, with the hollow of the curve to the symphysis, where, after gentle probing movements, to determine that it could be carried no farther, the hollow curve was turned from the symphysis, so as to render its entered extremity prominent in the peri-

neum, and so held by an assistant. An incision was now made through the perineum along the rapheal line down upon the extremity of the sound, which allowed the end of that instrument to appear through the wound. A grooved director of small size was next entered and passed on to the extremity of the sound in the urethra, the latter instrument being simultaneously partially withdrawn, to make room for the director, which was made to follow it about an inch. With the groove of the director to the rapheal line, and a sharp-pointed narrow bistoury directed by it, the urethra and perineal strictures were laid open fully an inch, which, after the blood was cleared away, brought into view an exceedingly minute opening, rendered more clearly distinguishable by the passage of a few drops of urine, situated on one side of the urethra, and fully three lines above the bottom of the cul-de-sac. This orifice was now dilated with the point of the bistoury, so as to allow the director to be introduced, which entered readily, and was carried quite into the bladder, and upon it, by rotating it, the stricture was divided on four sides. Removing the sound and director, and sponging away the blood, a No. 12 gum catheter, well oiled, was introduced from the meatus through the divided stricture quite into the bladder, which, after closing the perineal wound with sutures of leaden wire deeply inserted, completed the operation, with the exception of adjusting and confining the catheter in the urethra and bladder, washing out the vesical cavity with cold water to cleanse it of blood, and adapting a stopper to the catheter to prevent accidental discharges of urine. The patient was confined in bed until the perineal wound healed, cold water dressings were employed to the wound by the use of compresses, the bowels not allowed to be disturbed for four days, and a diet of liquids was enjoined. The wound healed in a great degree by the first intention, but the ligatures were suffered to remain until a fresh tube was introduced on the twelfth day. In three weeks the patient had recovered entirely, and without a single untoward occurrence, and is yet alive, a hearty old gentleman of over sixty-five years of age.

CASE II.—M. D., *æt.* about 28, of rather delicate constitution, of slender person, free habits, and a tailor by profession. Early after puberty he contracted a terrible gonorrhœa, and either from bad management or imprudence his cure was tedious. Soon after recovering from his attack of gonorrhœa he married, and for a year or more his habits were less dissipated, and his health somewhat improved; yet he was an infirm man, and often complained of his urinary organs, especially in regard to unpleasant sensations in urinating, with increased desire to evacuate the bladder, and a perceptible diminution of the volume as well as force of the stream. At length the case assumed more threatening characters, urina-

tion becoming difficult in a marked degree, and the stream so much disordered as to appear mere dropping most usually, attended with painful straining very often. In this condition the gentleman visited the writer from a considerable distance, and the night after his arrival he was threatened with retention from fatigue, which, however, was relieved spontaneously after much suffering. After a day's rest an attempt was made to pass the obstruction of the urethra, which was seated very deeply in the canal; and for the purpose very small catheters, both metallic and gum-elastic, bougies and probes were employed. The exploration was attended with much difficulty, and protracted trials, variously modified, resulted in complete failure. Regarding the case impenetrable permanent stricture, and believing from the trials already made that the perineo-urethral section was the only safe expedient offering a chance of relief, and the patient having consented, the operation was performed on the 13th of April, 1840, and very nearly after the manner of that adopted in Case I. From the great depth to which the female sound was carried, it was to have been supposed that the obstruction was in near proximity with the prostate gland; accordingly, when the urethra was laid open, the membranous portion immediately at the prostate was found to be the seat of the stricture, and the bistoury, at the same time that it entered the urethral canal, also penetrated the contraction, as announced by the escape of urine in considerable quantity. A careful examination, after enlarging the wound in the direction of the glans and dilating it, disclosed the fact that the stricture was at the prostatic extremity of the membranous portion of the urethra, and that it as well as the corresponding extremity of the prostate had been incised. After enlarging the opening in the stricture with the bistoury, the female sound, previously removed from the urethra, was passed into the bladder through the newly formed opening, which, being large enough, a No. 12 gum catheter was introduced from the meatus through the divided stricture fairly into the bladder, without the slightest difficulty, where it was confined, as in Case I. The perineal wound was sponged out and closed with leaden sutures deeply inserted, as in Case I, and the sequel of the treatment, in all respects, was that adopted in that case. This patient recovered perfectly in three weeks, and is yet alive and a healthy old man.

Remarks.—Penetrable stricture of the urethra, formerly so difficult of successful treatment, in the hands of the writer has been found quite manageable in a vast number of instances. Indeed, he will say, without egotism or boasting, that his first case of failure is yet to occur. Even in examples of the impervious description he has been invariably successful. An account of his mode of treating penetrable stricture was published in pamphlet form many

years since, with diagrams of the instruments employed by him; and the mode of operating described in that monograph, as well as the instruments, are the same he now employs. It is true he has improved the instruments greatly, but they are virtually the same in principle as well as in form. As now practiced by the writer, the operation for pervious stricture is the nearest and most beautiful operation in surgery, with the single exception of couching in cases of solid cataract; and it is comparatively painless and bloodless, as well as entirely free from danger to life.

Successful Cure of Cerebro-Spinal Meningitis.

The annexed case is reported by BORLAND, in the *Boston Medical and Surgical Journal*:

W. E. M., aged 17, a resident of 32 Albany street, Boston, was admitted to the Boston City Hospital, coming under my care on the 13th day of last January. He was delirious, and the history of the case could only be made out from his friends, who stated that he had been an active, energetic boy. About a fortnight before he was taken sick he commenced work as a carriage painter, but was during this time employed as the youngest apprentices at such occupations not unfrequently are, in the performance of a variety of odd jobs. On the 6th of January he felt poorly, with chilly sensations lasting all day. On the next day, when stowing away some coal, he became so ill that his employer noticed it, and sent him home in the middle of the forenoon. He went to bed delirious, with intense headache, pain in his neck and upper part of his spine, which became stiff, with head drawn back sharply between the shoulders. During this week he had involuntary dejections and micturition.

When he was admitted to the hospital, his head was fixedly drawn backwards. He was noisily delirious, though he could be compelled to return to a temporary lucidity, but on ceasing to put imperative questions he at once relapsed into loud shouting delirium, calling imaginary names, cursing, complaining of his head, then wailing, whining, simpering. He was constantly opening his eyes to their fullest extent and then closing them tightly. Light was evidently painful, as was sound, for if any one spoke in a loud tone near him, he would instantly beg them to hush. He had dried blood about his nostrils, as if from previous nose-bleed. His lips were dry and cracked. There was much sordes on the teeth. His tongue was dry and glazed at tip; dry and heavily coated on the back part. The skin was not very hot; there was a scattered acne over the upper part of the chest and shoulders. Any movement of the patient on to his side caused loud complaints of pain in the head, neck and back. In the evening his pulse was 100. Respiration 36. Temperature $101\frac{1}{2}$.
Jan. 14th. There was internal strabis-

mus of the right eye. Tongue dry, glazy and brown. Pulse tended to reduplicate. There were about the neck, forearms and wrists faintly marked reddish livid blotches, but no real maculation of the skin noticed, nor was it at any later period. Nothing very marked about pupils. Temperature in A. M., 102°; in P. M., 102½°. Pulse ranged from 104 to 96. He was ordered fluid ext. ergotæ, fifteen drops every four hours; sol. brom. potass., twenty grains every four hours, alternately. Evaporating lotion to head and heaters to feet. To be fed with broths, soups, milk, etc.

Jan. 15th. Delirium of same character, but less noisy. Strabismus, with constant opening and shutting of right eye, continues. No return of nose-bleed. Teeth covered with thick sordes. Tongue very heavily covered with thick, yellow, foul coating, and deeply seamed with fissures. Bowels costive. Still involuntary micturition. Pulse 68 to 72, and sufficiently strong. Temperature 99°, in the evening. B. pulv. jalapæ, hydrarg. submur. as gr. viij. M., at night; and to be thoroughly washed with soap and water, and rubbed with spirits.

Jan. 16th. Learned to-day that he inherits consumption on the father's side, and that his father is now sick with chronic lung disease. The patient seemed duller and quieter than before, but answered questions rationally. The pupils were somewhat dilated, but responded slowly to light. He said that the headache was lessened. Head still retracted, though the neck, if anything, is less stiff. Bowels freely evacuated after an enema. Sordes flaking off a little from tongue and lips. Pulse varied from 76 to 104. Temperature 103°.

Jan. 17th. Only difference was that the eyes were less dilated until late in the evening, when the temperature rose to 103½°; noisy delirium, and complaint of headache returned. After a while became quiet, but was wakeful and restless all night.

Jan. 18th. He was more stupid. There was a want of expression of the right side of the face, suggesting facial paralysis; the right nostril a little dilated, and the right eye more staring, though still winking and with internal strabismus. His tongue rather less coated. Pulse 92. Temperature 102½°.

From this date to the 24th of January his condition slowly improved. Temperature gradually falling to the normal point.

On the 24th he was, at the visit, sleeping; not roused by loud talking, allowing eyelids to be raised without awaking him. He could be roused enough to answer a question, but instantly fell off into his lethargic condition, which lasted until the 29th, during which time his pulse was feeble, about 80 to 90. Temperature a little below the normal point. Sordes disappeared from mouth, tongue becoming bright red. Skin was dry and harsh, involuntary dejections and micturitions continued and bedsores formed. Ergot and bromide treatment was omitted on the 26th, and sulphate of quinine gr. i. given three times daily.

Jan. 31st. A record of no marked change except rather more mild delirium, but on February 4th the record was: Patient becomes entirely rational and natural. Pulse 86, good strength. Temperature 99°. Countenance bright and natural. Skin cool, soft, natural. Tongue clean, no sordes, no strabismus, or facial paralysis. Motions of head free; no cervical tenderness. Appetite good. Able to feed himself. Has regained control of bladder and bowels. Only suffering and complaint is from bedsores. He was put upon the syrup of the hypophosphites of lime, soda, potass. and iron, 3l. three ter dlem, quinine being omitted.

Since the last date patient has steadily progressed in his convalescence, and he is able to walk about. Bedsores healed, and mind perfectly clear. He was afterwards discharged, well.

The Diagnosis and Treatment of Alveolar Abscess.

This affection is described as follows, in *The Dental Cosmos*, by Dr. FRANK ABBOTT:

The symptoms of acute alveolar abscess are, first, a slight tenderness on occlusion of the teeth, or on percussion with an instrument. On inspection, a marked discoloration of the tooth is perceptible. The soreness (which is soon accompanied by pain) rapidly increases, so that in from twelve to twenty-four hours the tooth will be slightly projected, and so excessively painful to the touch that the teeth cannot be brought firmly together. These symptoms are accompanied by an increasing throbbing, diffused over the side of the head and face, and slight febrile action. About the fourth day after the original tenderness, the patient will experience rigor, loss of appetite, and excruciating pain, which pain lasts from two to four days.

During this latter period the alveolus has been undergoing perforation. When the pus has reached the soft parts, the pain materially subsides. The gums and face begin to swell, increasing rapidly.

From that time we have all the symptoms of an abscess in soft parts in general, such as fluctuation, etc. "When evacuated, the pus is found to be thin, with traces of blood coming from the centre;" and from the surface cut, or walls of the tumor, the bleeding will be quite profuse.

In the chronic variety there is, first, a slight tenderness of the tooth, which increases very slowly, and sometimes appearing to improve even. The pain experienced during perforation of the alveolus is slight, preceded by very little or no throbbing. The swelling of the gums and face occurs much slower, and to a much less extent, than in the acute; and when evacuated, the pus is thick, with very little if any traces of blood, either from the centre or walls of the tumor.

The symptoms of the false variety are, first, a tenderness of the gum at a point opposite the upper third of the fang of a tooth; on occlusion of the teeth, or on percussion

with an instrument, slight periostitis is observed. The gum swells rapidly, but to a limited extent; the substance of the gum over the point of irritation being thin, the abscess very soon points, or comes to the surface, and is evacuated. The pus is thin, resembling very much that discharged from the acute form of the true, but very slight in proportion.

Treatment—This may be divided into local and constitutional. The local consists in abortive, palliative, and curative measures. The abortive may be resorted to in the early stages of the morbid action, when the tooth is tender, projected, and discolored. It consists in opening the pulp-chamber by drilling through the crown of the tooth. This, however, must be done at any stage; but if performed early, it will abort the external abscess.

Palliative measures consist in relieving pain, and limiting destruction of tissue. Pain may be controlled by hypodermic injection of morphia, from one-eighth to one-fourth of a grain, morning and night. Limitation of destruction of tissue may be effected by the direct application to the gum of a solution composed of Fleming's tincture of aconite root and tincture of iodine, equal parts, two or three times a day, with evacuation of the pus, as soon as fluctuation can be detected. Curative treatment is only applicable after the pus has been evacuated; it includes the removal of the source of irritation, viz., the dead pulp, and the thorough introduction of antiseptic solutions into the pulp canals and abscess.

The most reliable solutions for this purpose are permanganate of potassa, grs. x to water $\frac{3}{4}$, followed by carbolized oil, one part of carbolic acid to fifteen of olive oil, introduced in the following manner: an instrument small enough to pass readily through the entire length of the canal is employed, on which is wound a bit of cotton; this being dipped into the solution and forced into the canal, acts as a piston, and thus the abscess and fistulous opening are filled with the remedy. Where the canals are flattened so as to prevent the perfect adaptation of the piston, they may be introduced by saturating a pellet of cotton with the solution, placing it into the cavity of the tooth, then with a piece of partially-softened wax placed over the orifice of the cavity, and pressed upon the cotton; the solution contained in it is readily forced through as desired, one application often being sufficient to effect a cure.

Constitutional treatment embraces attention to the prime *vise*, allaying undue febrile action by arterial sedatives, and insuring a proper supply of nutritious food as convalescence progresses.

In syphilitic patients with chronic abscess, iodide of potassium is the sheet-anchor, in doses of v to xx grs. three times a day.

In scrofulous patients cod-liver oil, $\frac{3}{4}$ ss three times a day, and syr. ferri iodidi from gtt. x to $\frac{3}{4}$ s three times a day, may be advantageously employed. The two may be taken together.

The treatment of false alveolar abscess consists chiefly in removing the calculus deposit, and the use of astringents on the gums. Its removal should always be accomplished by mechanical means, not by chemical action, as is the case in the uses of acids, as the substance of the tooth is very seriously injured thereby.

Treatment of Rheumatism by Sedatives.

In an article in the *Kansas Medical Journal*, on "Tranquillization as an Element of Cure," Dr. TODD cites these illustrations:—Still more remarkable—confirmatory of what has already been said, but especially as illustrating the value of combined effects from components of the several classes known as cerebral stimulants, nervous sedatives, and cerebral sedatives—are the results had in some cases of acute articular rheumatism, coming under our observation within the past few months; remarkable from the fact that the disease in the three cases we shall cite was apparently *cured*, not suffered to "wear itself out," and also for the inexpressible comfort afforded the patients, and the rapidity and completeness of their recovery.

A CASE OF ACUTE ARTICULAR RHEUMATISM.

H. H., an impecunious wretch, aged about 28 years, was suddenly seized with rigors, which continued for twenty-four or thirty-six hours. Saw him soon after the rigors began; found the skin hot, urine scanty, and the tongue thickly covered with a yellowish-white coating. Gave a mercurial cathartic, to be followed in a few hours by tartrate of potassa and soda, which resulted in free catharsis. At bedtime administered a full dose of morphia. Saw him again the following morning; had slept but little. Both wrists and elbows and one knee were now greatly swollen, and his suffering was intense. Injected one-fourth grain of morphia and one-fortieth grain of atropia near the swollen knee-joint, and prescribed equal parts of laudanum and fluid extract of colchicum, twenty drops in sweetened water, every three hours. Saw him again in the afternoon, and repeated the injection near to another swollen joint. In the evening, forty-eight hours after the attack, the ankles and knees, wrists and elbows of both sides were greatly swollen, and intensely painful. To be brief, he had injections of morphia and atropia, the latter to the extent of impairing vision, twice every twenty-four hours, selecting a new point at each insertion; the laudanum and colchicum every three, four, or six hours, and an opiate every night for the first five or six days. At the end of this time the colchicum mixture, purging him too freely, was discontinued, and soon after the subcutaneous injections also were omitted. Opiates were continued for a few evenings longer, and the wife was still allowed to please herself with the use of liniments, which she had used most assiduously from the beginning. In ten days from the date

of the attack the pain and swelling had almost wholly disappeared, and the patient was able to leave his bed; and in six days more he ran away, leaving his medical and board bills unpaid. With the ordinary treatment, we think this man would not have run away under ten or twelve weeks.

TWO MORE CASES OF THE SAME.

The next case was that of H. P. S., a railroad contractor, who contracted his rheumatism from exposure. He came home from the line of his duties feeling indolent, and fearing an attack of fever. An active cathartic was given at bedtime. Early in the morning rigors supervened, and the joints of both legs and both arms were found to be swollen and painful. During the day and night following, the disease fully developed itself; the limbs were greatly swollen, the skin hot, and the pains quite agonizing upon the slightest attempt at motion. The treatment was similar in all respects to that of the case first mentioned, excepting that chloral in drachm doses added to the morphia constituted the evening dose, from the effects of which he always slept soundly, lying wholly upon his back. After the third day a considerable abatement of intensity occurred, and by the eighth day the pulse had nearly resumed its normal character, pain had ceased, and the swelling was fast disappearing. He left his bed on the twelfth day, and our visits were discontinued on the fourteenth.

The third case happened in the person of D. H. E., a merchant. In violence this case fully equalled either of the two foregoing cases. Its irruption was marked with rigors, followed by a hot skin, furred tongue, thirst, and rapid swelling of the joints, as in the other cases. The treatment was precisely the same as in the last. In three days he was almost free from pain, and from this time the swelling and other symptoms rapidly subsided, so that by the seventh or eighth day he was able to stand upon his feet, and twenty days after the commencement of the attack he walked the streets without crutches. In none of the cases yet treated in this manner have we been able to detect cardiac complication.

REVIEWS AND BOOK NOTICES.

NOTES ON BOOKS.

The Literary Monthlies.

Among the regular visitors to our sanctum are *Scribner's Monthly*, *The Atlantic*, *Harper's Magazine*, and *Our Young Folks*. They all have their peculiar excellencies, and, indeed, we value them so highly that we have files of each of them from the commencement. For ourselves *Scribner* has

been the favorite, but each has its advocate in our family. They are all good. The illustrations in *Scribner* and *Harper* are particular attractions, and deserve commendation for their excellence. They comprise a pictorial history of the times, with an occasional glance at ancient history, as in *Harper's* for July, which contains beautiful illustrations of DI CESNOLA's recent, remarkable antiquarian discoveries in the island of Cyprus.

BOOK NOTICES.

A Practical Treatise on the Diseases of Infancy and Childhood. By THOMAS HAWKES TANNER, M. D., F. L. S., etc. Third American Edition, from the last London Edition, revised and enlarged by ALFRED MEADOWS, M. D., London, etc. Philadelphia: Lindsay & Blakiston, 1871. 1 vol. 8vo. Cloth. pp. 559. Price \$3.50.

The works of the late Dr. THOMAS HAWKES TANNER are favorably known to the profession for carefulness in compilation, and a very thorough literary treatment of his subjects. Possibly they lack somewhat in showing an extended experience on the part of their author. But they are excellent guides, nevertheless.

His present essay on the diseases of children has received a careful revision by Dr. MEADOWS, and having used it ourselves as a work of reference, we are enabled to speak unhesitatingly in its favor as a practical treatise, abounding in useful suggestions, and well up to the present position of infantile therapeutics. The fact that this is the third edition in this country is also to be regarded as a voucher for its value.

AMERICAN MEDICAL ASSOCIATION.

The Triennial list of Permanent Members will be published this year. Permanent Members who have not paid their assessment will please notice:—

"Any Permanent Member who shall fail to pay his annual dues for three successive years, unless absent from the country, shall be dropped from the roll of Permanent Members."

WM. B. ATKINSON,
Permanent Secretary.

MEDICAL AND SURGICAL REPORTER.

PHILADELPHIA, JULY 13, 1872.

S. W. BUTLER, M. D., D. G. BRINTON, M. D., Editors.**Medical Societies and Clinical Reports, Notes and Observations, Foreign and Domestic Correspondence, News, etc., etc., of general medical interest, are respectfully solicited.****Articles of special importance, such especially as require original experimental research, analysis, or observation, will be liberally paid for.****To insure publication, articles must be *practical, brief* as possible to do justice to the subject, and *carefully prepared*, so as to require little revision.****Subscribers are requested to forward to us copies of newspapers containing reports of Medical Society meetings, or other items of special medical interest.****We particularly value the practical experience of country practitioners, many of whom possess a fund of information that rightfully belongs to the profession.****The Proprietor and Editors disclaim all responsibility for statements made over the names of correspondents.**

Quite too many of our subscribers, many of them old, personal friends, are in arrears on their subscriptions, aggregating a large amount of money that we ought to have in order to a vigorous prosecution of our enterprise. These parties are requested to settle their accounts immediately, or at least communicate with us at once—for, instead of at present further enlarging our edition to accommodate new subscribers, we shall resort to the expedient of dropping the unprofitable ones, and putting their bills into the hands of a collector. *

THE MEDICAL VIEW OF ABSTINENCE.

The published letter of Dr. BEARD, of New York, to which we devoted some editorial comment (see REPORTER, last volume, page 288), has been noticed at length by Dr. ANSTIE, in the *Practitioner* for May, and in highly commendatory terms. He makes it the text for a general discussion of the temperance, or rather total abstinence reform, and advances some views and inquiries which deserve our most attentive thought.

However strongly we feel the importance of temperance to the moral and physical welfare of the race—and we concede to none more earnest desires in that direction—we are not the less convinced that an avoidance of *truth*, a denial of facts, or a habit of deliberate mental bias, will not benefit this or any other good cause. Therefore we lay before our readers Dr. ANSTIE's inquiries, not with the intention of either supporting or refuting them, but from a desire to see this leading sanitary question fully understood and discussed from its scientific as well as its merely moral aspects. As physicians we are better able to appreciate the weight we must give to physical impulses in estimating moral conditions.

Dr. ANSTIE asks:—

1. We want to know how they can justify the statement, everywhere repeated by their speakers and writers, that alcohol is nothing but a poison. If they are ignorant of the results of recent research, we can only say that they have no right to be uninformed and at the same time teachers. If they are not ignorant, they are aware that alcohol is a hydrocarbonaceous substance, which can be taken in considerable daily quantities without provoking any other visible reactions than those which follow the ingestion of any hydrocarbonaceous food; that there is no known example, in the whole scope of our experience, of such a substance, not an aliment, being so dealt with by the organism; and, finally, that there is positive evidence that life can be sustained by alcohol, in the absence of all other nutriment, for a considerable period.

2. We want to know what reasonable grounds the teetotalers have for treating drunkenness as a 'vice of altogether different type from a number more which depend on over-indulgence of the appetites. If they are ignorant of the facts which medical observation teaches on this head, again we say they have no right to lay down principles. If they have studied the history of the human nervous system and its weaknesses from a medical point of view, they must know that the tendency to drunkenness is, in by far the majority of cases, only one phase of a defective moral tone (very often congenital), which might just as easily have

shown itself in half-a-dozen other forms of vicious self-indulgence.

"3. Again, we ask the teetotal party, in all seriousness, how they can venture to argue upon the causes which keep up or extend (if extended it be) the prevalence of drinking, while ignoring the prodigious impulse to luxuriosness of all kinds, and not merely to alcoholic indulgence, which the special circumstances of our modern society supply. Viewed as the physician is compelled to view it, that society is seen to be dominated by one influence, above all others, which tells upon the most widely different classes with results that are substantially identical.

"There is another aspect, however, of the teetotal views which, to men of science and men of the world (in that better sense which implies a wide knowledge of and sympathy with humanity) makes them appear more hopelessly unpractical than ever. We refer to the essentially *feminine* or *clerical* way of regarding humanity and its weaknesses, which lies at the bottom of the belief that total abstinence can be usefully applied to society in general, as a measure of reform and precaution. The principle of asceticism as a remedy for the weaknesses of persons who are already thoroughly degraded in their moral sense, has a value which we all acknowledge; it is strictly analogous to the forced detention of a lunatic asylum; but it is a barbarous remedy, that has failed in every age when applied to the moral nature."

After supporting the views which these inquiries indicate, at considerable length, he closes thus, speaking of forcible restraint:—

"The great lesson of life, that of self-restraint, is not to be learned in this way; on the contrary, the learner is taught an altogether false confidence in what seems a talisman, or charm, to keep him always right and safe. We entirely agree with Dr. BEARD that such expedients can never serve more than a temporary and inferior purpose; and we are weary for the day when these one-sided plans for improving human nature will be seen, even by their present promoters, in their true proportions. How long are we to look for our real reformer, our 'vieux pécheur qui saura consoler les pécheurs,' because he will show a genuine knowledge of the flesh and blood of which all humanity is built, and will frankly

admit that human nature, as we actually see it, never very precisely resembles either that of the spiritual sheep or the spiritual goat, but rather is an uncertain and varying mixture of them both?"

We are beginning to understand that in many instances inebriety is a constitutional weakness, limited to a small minority of the human race, a minority whom alcohol attracts with the charm of the basilisk, and poisons with the venom of the adder. Before us lies a circular headed, "The Disease of Inebriety," from Dr. ALBERT DAY, Superintendent of the Greenwood Institute for Inebriates. After speaking of what temperance societies, etc., can do, all praiseworthy in their way, he says:—

"It is evident that however useful all those influences may be, as *mere outward helps*, something more is needed: for, even admitting inebriety to be merely a mental disease, a species of insanity, inherent or acquired, by some means of which the patient has no knowledge, yet, such are the peculiar relations of mind and body, the abnormal condition of each acting on the other, that while the morbid developments of the physical system, which result from inebriety, will effectually paralyze all efforts at restraint, the continued indulgence, which the patient is powerless to deny himself, will daily aggravate those infirmities, which render resistance impossible. No effort for renewed self-control can be made, therefore, with a chance of success, without the help, so far as possible, of a healthy system, both mental and physical.

* * * * *

"The *will* must be stimulated and strengthened, up to the point of total abstinence, by removing, through all the resources of medical and psychological skill, everything which has undermined it in the past, or may enfeeble it in the future. When the power of will once more asserts itself over appetite, or, in other words, when the power to practice total abstinence is attained, it is of little practical importance whether the appetite lives or dies.

The method of cure consists, therefore, in applying the proper remedies to the physical condition, thus removing every weakening influence which past indulgence might have over the will. Then, when the physi-

cal system is in the right condition, leaving the mind entirely free, let no man, however long he may have been a slave of appetite, imagine that he is the helpless victim of destiny; he can have power over himself to repress the cravings of his appetite, for human will counts for something, not only in the modification of physical nature, but in the modification of a man's own nature."

These words explain more clearly than most utterances we have met with, the true philosophy of preventing drunkenness. What avails the teaching which does not strengthen the will, but simply seeks to remove it from a chance of exercise? Do we, in training the body, carefully guard it from use, or do we accustom the powers to vigorous, self-reliant exercise? Is it not time the mediæval notion that we should shut ourselves up from contact with evil be supplanted by that nobler doctrine which bids us steel our nerves for the encounter by daring and by conquering? No permanent victory crowns the warrior who saves his army by constantly shunning the combat.

The plan recommended to cure the inebriate is also the plan, with necessary modifications, to prevent his fall. But it is at least questionable wisdom to insist that, because a small minority of the human family grossly abuse an element, the whole use of it should be forthwith, without further examination, laid under ban.

NOTES AND COMMENTS.

The Alkaloids of Opium.

A careful examination of the numerous alkaloids of opium has enabled M. RABUTEAU to classify them in reference to their physiological effects as follows, in the order of their power on the human subject:—

Soporifics.—Morphine, narceine, and codeine. The other alkaloids do not produce sleep.

Poisons.—Morphine, codeine, thebaine, papaverine, narceine, narcotine.

Analgesics.—Narceine, morphine, thebaine, papaverine, codeine. Narcotine does not seem to diminish pain.

Anexosmotics.—Morphine, narceine. None of the others have the power of arresting diarrhoea.

Meconine and meconic acid appear to be entirely inert.

"Crowners-Quest Law."

Some weeks since a man was found dead near West Overton, a village in the interior of Pennsylvania. A jury was called and an inquest held. In their verdict the jury declared "that on the person of this young man there were no external marks of violence, but that the said jurors and the said justice of the peace have strong suspicion and firmly believe that, from the evidence adduced, the deceased came to his death from internal violence, or an unlawful act."

In order to ascertain why a post-mortem examination of the body had not been made, and why justice had not taken the rightful steps to secure this man's murderer, a representative of the press visited Mount Pleasant, a village three miles distant from West Overton, and where resides the party who acted in the capacity of coroner.

He said it was the first inquest he had ever held, and he wasn't as well posted as he might be. That he firmly believed the stranger had been poisoned, but he was deterred from ordering a post-mortem examination owing to Dr. M. B. GAUT, of that place, asserting that it would cost \$500 to discover the poison in the stomach, and that the analyzation would have to be conducted in Philadelphia. This settled the matter.

So much for the way inquests are held under our present system.

"*2d Clown*.—But is this law?

"*1st Clown*.—Ay, marry is't; crowners-quest law."—*Hamlet, Act V, Scene I.*

Healthy Sites.

A writer in an English exchange remarks on the taste many have to erect their ancestral domicile in the "navel of a wood," with the result of breathing a confined and shut-up air. As one consequence of this, colds and catarrhs are rife after every great and sudden change of temperature. The healthy rays of the sun, too, which have been apostrophized as the automatic bath of Nature, obtain little or no entrance upon the scene, save when, at their full power, they shine down upon the roofs and verandahs. Here they could be dispensed with. Now a well-placed mansion will be found to be upon a

gentle slope, with no obstruction to the lateral external ventilation. It will, however, be sheltered from the most obnoxious winds. It will also lie almost due north and south, so as to make the most of the morning and evening sun. The breakfast room will be on the east, not on the north side; for to that aspect will be consigned the stores on the ground-floor and basement, and the baths and closets on the bedroom floors. If the maximum of comfort is to rule in the house also, the dormitories will not derive their light from the north. The drawing-room, for patent reason, will be constructed in the sunny south, with its adjunct, the conservatory; and in the sleepy west, the dining-room, with its appendage, the billiard-room. There are very few wise departures from the above rules.

Use of Emetics in Typhoid Fever.

Recently, at a meeting of the Surgical Society of Ireland, Dr. HENRY KENNEDY read a paper on the use of emetics under certain circumstances in continued fever, and other acute diseases. His attention was called to the subject by observing good effects after the administration of an emetic in two cases. A boy, aged fourteen, had pyrexial symptoms, an enormous mass of enlarged glands encircled his neck, and there was also some nausea. To meet the indication afforded by the last-mentioned symptom an emetic was given. The glandular swelling rapidly subsided. In a lady, suffering from phthisis, nausea occurred; an emetic removed this symptom, which did not return for many months. Dr. KENNEDY was then led to try the remedy in certain cases of acute disease. A girl had considerable secondary fever after scarlatina. Nausea and vomiting recurred frequently on her awaking from sleep. An emetic was given, and the patient made a good recovery. In this instance the symptoms were presumed to arise from the swallowing of exudation from the nose and throat during sleep. A fourth example was met with in the bronchial affection of typhus. In a fifth case an emetic, given on the seventeenth day of typhoid, acted remarkably well. The sixth case was also one of enteric or gastric fever, in which relapse occurred. The seventh, one of typhoid, was complicated with a diphtheritic affection, and threatened gangrene of the feet. Symptoms of relapse also appeared on the thirty-fourth day. An emetic was given, and

stimulants freely administered. Dr. KENNEDY believed that mildly stimulating emetics were sometimes indicated in advanced stages of typhoid fever which presented a tendency to relapse.

The Influence of Soil on the Spirits.

It is a curious fact that some soils seem to exert a depressing, others an exhilarating effect on the spirits. Some, for instance, and notably those of volcanic origin, as where tufa abounds, cause a considerable amount of depression of spirits and fatigue of body. A hint was even thrown out, that to travel for any very considerable time upon asphalted roads and pavements brought about a similar feeling of weakness, which only a change to the macadamized or paved roads would alleviate. If this be true, it will not do to use asphalte for the paths in our flower-gardens, as many of us are thinking of doing. A strange sense of fatigue and dejection has even been experienced by the dwellers upon the indurated clays or *rab* soils of Wales, which a short sojourn on the Silurian limestone or old red sandstone dispels. The alluvium deposits of Bordeaux have also been known to cause continual sleeplessness in some visitors to that city, for which a railway trip was the only cure.

Medical Use of Muriate of Lime.

This salt was the subject of a paper before the Medico-Chirurgical Society of Edinburgh, by Dr. WARBURTON BEGBIE. He detailed briefly the chemistry and the preparation of the salt, its past history as a remedy, sometimes greatly praised, again unduly forgotten, and then gave his own experience of its value as a remedy in those cases of scrofulous glandular enlargement in which cod-liver oil and iodine were either not well borne or had failed. Without undervaluing cod-liver oil, there are cases where it did not suit the patient, and many in which iodine was not useful. In these the muriate of lime, in doses rising from twenty minims of the solution, given in milk or water after meals, was of great value. Dr. BEGBIE concluded by a graceful tribute to the memory of his father, who entertained a high opinion of the usefulness of the drug. A discussion ensued, in which Dr. JOHN MOIR, Dr. STEPHENSON, and Dr. BRECKENRIDGE gave their opinions as to the value of muriate of lime from a clinical point of view; and Dr. T. R. FRASER pointed

out that, from *a priori* reasoning, and from our knowledge of the chemistry of the blood, the muriate was the best salt of lime to administer, and the one most likely to have a good effect in nourishing the frame.

A Splendid Inkstand.

We have received from the Cleveland (Ohio) Inkstand Company, one of CATLIN'S Combination Atmospheric Inkstand, Mucilage Stand, Sponge-cup and Pen-rack. It is a most complete affair. Not a particle of dust, or even dry air can get to the body of the inks or mucilage. The company manufacture one hundred and ninety different sizes and prices, all operating on the same philosophical principle. The one sent us is No. 1 of their catalogue, containing bottles for three different varieties of ink, a mucilage, and a sponge-cup and pen-rack, price \$5. Send to the company, as above, for a catalogue.

External Use of Camphor in Gangrene.

Dr. SAFFORD translates, for the Chicago *Medical Examiner*, the following note:—

A. Netter, in Riemes, is of the opinion that hospital gangrene is a peculiar destruction of the subcutaneous and intermuscular, cellular and fat tissues.

The destroyed mass contains, therefore, much fat. The camphor unites with this at a low temperature, and forms a fluid substance, a camphor oil. This is discharged; and then comes to view the tissue capable of life.

Netter says if there are no anatomical lesions, aponeurosis, fascial and otherwise, neither inflammation, complicated with erysipelas, nor pyæmia, that camphor, early applied, and in large quantities, is a sure cure for hospital gangrene. He cites a large number of cases successfully treated in this way. Eight cases that were cured are fully described.

He also tried, with equally good results, camphor powder upon phagadenic chances that had assumed a gangrenous form.

From his remarks we infer that the spread of hospital gangrene rests upon a ferment, whose life, camphor powder seems to cut short.

He tried in two cases the application of quinine and charcoal, but without the desired result.

He considers the disease a purely local one, and that the general *malaise* accom-

panying it is only in consequence of local disease, the re-absorption of putrid material. He considers the application of ferr. seq. chlor. as dangerous, and recommends camphor-gum as the most effective remedy in his hands yet tried.

Sharp Practice in Vienna.

A Vienna correspondent of the Chicago *Medical Examiner* gives a warning about the private medical courses there, which we are sorry to see needed. Such tricks are disgraceful. He says:—

There are quite a number of private courses, conducted on the evident principle of first squeezing all the money possible out of their victims, and then giving them just as little instruction in return therefor as possible, with the idea, apparently, of thus obliging them to take another course in order to complete the unfinished subject; very much on the same principle that a gambler, after having played once and lost, must try again in order to recover his loss, and then having lost a second time, he cannot, of course, give up without one more effort to win it all back.

I might mention here a single case in illustration. A certain young professor, the son of one of the best known, leading members of the Vienna faculty, gives a private course of twelve lessons, one hour each, on auscultation and percussion, for which he charges the moderate sum of fifty guilders, or twenty-five dollars. One of his late victims, on venturing to mildly remonstrate with him on the rather meagre and unsatisfactory character of the instruction received, and the very sparse amount of material offered for practice and illustration, received the suggestive reply that in his next course he should take the class into another ward, where there was a much better supply of material, and that he should, therefore, be able to make it much more profitable and interesting. My friend *didn't bite*, however. Very few do, I think, a second time.

The Sulphovinate of Soda.

A Parisian pharmacist, M. S. LINVOUSIN, describes the preparation of this salt in the *Bulletin de Therapeutique*, for March 30th, and recommends it as a mild and efficient saline purgative, with a feeble and rather pleasant taste, free from any tendency to griping, leaving no consecutive constipation, and acting in relatively small doses (25

grammes for adults, 10 grammes for children). He considers it superior to any of the magnesian purgatives, as these, when much used, tend to produce vesical calculi of ammonio-magnesian phosphates. The salt may be also named the ethylsulphate of soda.

A New Surgical Treatment.

At a meeting of the Surgical Society of Ireland, Dr. F. KIRKPATRICK brought forward a communication on the treatment of certain surgical diseases by the alternate use of caustics and the knife. His method was to make a slight incision, then to touch the part gently and repeatedly with potassa cum calce; again to carry the knife a little deeper, and in turn to use the caustic. A somewhat similar plan had been adopted in a leading London Hospital some time ago, when the caustic used was chloride of zinc paste. Mr. KIRKPATRICK had experienced the good effects of the plan in cases of tumors, of caries of bone, and of acute osteitis, of contraction of cicatrices after burns, in removal of epithelioma, in fistula *in ano*, in serofulous ulcerations and enlarged glands, in cases of furunculus and of deep-seated abscess. Sometimes the pain caused by the process was a serious drawback, and the patient required to be chloroformed.

CORRESPONDENCE.

On Sulphite of Soda in the Treatment of Small-pox.

EDS. MED. AND SURG. REPORTER:

Many of the diseases of man have their own appropriate remedies, and when such is not the case the treatment must be expectant. Before the outbreak of the present epidemic of small-pox, this fearful disease was treated entirely upon the expectant plan, and even yet this is the treatment in many instances. But the remedy found to be most effectual is the sulphite of soda. Small-pox evidently is a disease originating in the blood, and, as believed by many, a septic poison; and since the sulphites are so efficient in many other septic diseases, why should they not be capable of arresting this disease?

Reasoning in this way, and hearing that many others of the profession had similar views, some even having put the sulphite of soda to a successful trial, I determined, if

possible, to give it an impartial trial. The first two cases under my care were two boys in the same family, aged respectively twelve and eighteen years, the oldest boy taking sick two days after the first. As soon as I had made a positive diagnosis, which was about the first day of the appearance of the eruption, I prescribed sulphite of soda in 8 grains for the younger and 10 gr. doses for the older, one every three hours, with pulv. ipecac. comp. at night. These cases were of the confluent form; they now progressed favorably, the eruption appeared, and passed through its several stages finely, no untoward symptom, with the exception of alarming epistaxis about the fifth or sixth day of the disease. By the way, this is a symptom of which the books say nothing, and which, in seven cases out of the twenty-six under my observation was alarming, in one instance carrying off my patient; it usually appears about the fifth day; never after the eruption is mature.

No other treatment was used for my two patients except a mild tonic or stimulant at the close of the disease. In some instances stimulants must be given throughout the entire course of the disease; the form preferred by us in this as well as in other diseases where stimulants are necessary, is spt. frumenti, in doses necessary to keep the system at par all the time.

In some cases a grain of crystallized carbolic acid added to the adult dose of the sulphite is very beneficial. The angina, in some cases so severe, was greatly benefited by a gargle of sulphite of soda and carbolic acid, one-half drachm of the former and five grains of the acid to the oz. of water. In cases where the eruption is tardy, the sulphite will bring it forth, will cut short the primary fever and thus prepare the patient to meet the most dangerous period, that of the secondary fever. It will keep up the secretions of the skin, kidneys and bowels; in few cases did I use any other medicine during the fever. When the fever was very high, potas. citras, given at short intervals and in doses of 10 or 15 grs., was very useful.

The sulphite, by keeping up the secretions, will prevent retrocession of the eruption. It will cut short the disease by at least one-third of the ordinary time under the old treatment; this is not just the experience of myself, but of many others. Of the twenty-six cases seen, twenty-three were treated; out of this number four died; two of these

utterly refused to take the sulphite on account of its disagreeable taste. Then out of twenty-one cases treated by the sulphite, two died, or a little less than one out of every ten. Most of these cases were severe from the start. The sulphite must be given in large doses; in two cases of a very malignant type the odor of the medicine was distinctly perceptible in the urine and perspiration; both, however, recovered. In all cases it acted like a charm, and I do not hesitate to say that, in the future, it will be the medicine relied on in this formidable disease. With such a weapon in our hands, let us not, therefore, fear to enter the fight.

D. A. HENGST, M. D.

Prospect, Pa., June 14, 1872.

Effects of Strychnia in Toxical Doses.

[The following accurate and remarkable description of the subjective sensations of a toxical dose of strychnia deserves preservation.—EDS. REPORTER.]

EDS. MED. AND SURG. REPORTER:

The causes that led me to commit the rash act of which I am about to give an account can be of no particular interest; and, omitting all allusion to motives, and making no attempt at excuse, I will simply state the circumstances of the case, that I think may be of interest to those engaged in the advancement of medical science.

I am induced to do this by the request of my friend and physician, Dr. E. H. COOVER, and the assurance that the case is a remarkable one, and likely to attract the attention of the medical profession everywhere.

On the morning of November 20th, 1871, at about eleven o'clock, I swallowed *nearly*, if not *quite*, one grain of strychnia, which had been in my possession since the 16th of that month. I was sitting on the side of the bed, in the second-story back room, in which apartment I have slept since I occupied the house. I took the powder dry from the paper, and held it in my mouth until it had become moistened with spittle, when I swallowed it; walked to the table and drank a glass of water; went into the room over the kitchen and hid the paper in which the poison had been, and then went down stairs, where I took a seat in a rocking-chair in front of the stove. In the course of five minutes I began to feel slight cramps in the calves of my legs. My wife was sitting by the table sewing, and I asked her for a couple of crackers, which she gave me. The cramps had by this time increased in inten-

sity, and extended to the feet and thighs, causing the most intense pain. I asked if there was an egg about the house, and being answered in the affirmative, told my wife to break it and give it to me raw. She then suspected that I had taken something, and began questioning me closely about it. I expected soon to be in eternity, and thought that no human power could avail to save my life, so I told her what I had done. She immediately raised an alarm, and Mr. JOHN HOYER came in, followed by several other neighbors. The egg was given me, besides a large quantity of warm salt water and strong tea, and a messenger was sent for Dr. COOVER.

About the time I called for the egg I attempted to rise from the chair, but fell to the floor with convulsions in the lower extremities, which became violent on the least attempt to move, and the feet were drawn in toward each other, becoming stiff and immovable save as the occasional convulsions shook them. Unsuccessful attempts were made to bathe them in hot water, each effort to raise me bringing on a violent paroxysm, in the last one of which I thought my jaws had become unhinged. I was now perfectly paralyzed from the hips down, and suffering the most exquisite pains, which began to extend upward, the muscles of the shoulders and neck soon being considerably convulsed, the forearms still being free from pain.

I now bade my wife "good-by," and prepared for the final struggle, which I knew must be near at hand, as I now had become rigid from the neck down (save the forearms); the convulsions of the muscles were becoming fearful, and the torture awful to endure. And now came on a tremendous convulsion. My hands were drawn in to my sides, with the fingers drawn apart and slightly bowed, and the jaws became rigid. I felt myself raised as if by some mighty power, and fixed immovably, with only my feet and head touching anything. I heard some one say, "It is all over with him," and felt something like a black pall settling down upon my brain, when I became unconscious of everything except my own agony, which was now beyond all description. I could feel my heart fluttering like a wounded bird, and my brain beating and throbbing with an irregular motion, as though at every beat it would burst from its confinement. Every joint was locked, and

every drop of blood seemed stagnated. I remember thinking that it could not last long thus, when I must have lost consciousness.

I remember nothing more until I felt a sensation of relief, as though the garments of Death which had been drawn over me were being now drawn back. Those terrible cramps seemed to be descending toward my lower limbs; a sweet feeling of relief stole over me, and I began to be again conscious. Turning my head, of which I now had command, I saw Dr. COOVER kneeling by my side, pouring medicine into my mouth from a spoon, and spoke to him, adding, "Here is the man that can save me," or words to that effect.

I was now free from cramps as far as the hips, and was fully conscious of all that was going on. I could feel the cramps receding before the antidote, and leaving the limbs free from pain until after the second dose administered by the Doctor, from the time I resumed consciousness, when I was entirely free from cramp, with the exception of a little in the feet. I was then moved into an adjoining room, and placed upon a pallet, feeling comparatively comfortable. I had but one attack of cramps afterward, which was immediately relieved by a dose administered by my wife, the Doctor having left for a short time; and when he returned I felt that the poison was completely neutralized.

I have since felt no return of cramps or convulsions; have had a good appetite, and could be out of bed were it not for the soreness in the muscles caused by the intense pain to which they were subjected.

(Signed)

Harrisburg, Pa.

NEWS AND MISCELLANY.

Glycerine as a Preservative.

THE use of glycerine as a preservative of anatomical objects, or specimens of natural history, has been strongly recommended; but it appears from experiments that it has an unfavorable action upon certain tissues. Thus, teeth kept for some time in glycerine lose their original hardness, and can be cut with a knife like horn, and oxalate of lime crystals appear to be completely broken up. These hints will be of importance to those who are in the habit of making wet preparations with this substance.

Isinglass Manufacture.

GLOUCESTER, Mass., is gaining much from the value attached to hake and cod sounds, which are used in the manufacture of isinglass. They are worth \$120 a barrel. Some of the fishermen carry out boys expressly to cut out the sound, and they make a very profitable business of it. On board a vessel which arrived recently, a lad made \$60 as his share, double the amount shared by the crew. Hake sounds are the most valuable, and obtain the highest price. It is only recently that cod sounds have been used, as they are far less glutinous than the hake. A new isinglass factory has recently been started at Rockport, hence the extra demand for this article.

Sanitary Inspector, New York.

Dr. Moreau Morris, City Sanitary Inspector of the Health Department of New York, has tendered his resignation to the Board, which was accepted, to take effect on the 1st of July. Dr. Morris has occupied the position since the reorganization of the Health Department, in May, 1870.

Dr. Elisha Harris, formerly Sanitary Superintendent of the Metropolitan Board of Health, and Dr. Charles P. Russell, the present Register of Vital Statistics of the Health Department, are candidates for the position.

IN Ottawa county, Kansas, recently, a child, two years old, died from being bitten by a rattlesnake. The head of the snake, with three or four inches of the body, had been severed with an axe, and was supposed to be lifeless, and the child happened to stop near the severed head, and was bitten, and died in about four hours.

THE people of Groveton, N. H., are suffering badly from measles. One of the schools has been closed, owing to the teacher and nearly all the pupils being prostrated by the disease, and other schools are largely reduced in numbers.

A FOREIGN vegetarian, who came to this country with the intention of introducing unbolted flour, has given it up as impracticable, because, as he asserts, the Americans give such little time to their meals that they bolt everything they eat.

Dr. S. M. INGERSOLL, who lived on the site of Columbus, Ga., before it was thought of for a city, has lately died. He claimed to have given Prof. Morse the primary idea that led to his wonderful invention.

YELLOW FEVER and small-pox prevail at Montevideo, and "an epidemic of some kind" has killed 8,000 out of 13,000 inhabitants of three Brazilian towns.

The native race of the Sandwich Islands is rapidly dying out. In 1870 and 1871, 7321 native Hawaiians died, while the births were only 4972.